Exponents and Roots

Review for Mastery: Scientific Notation

Standard Notation Scientific Notation

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1st factor is 2nd factor is an

between 1 and 10. integer power of 10.

430,000 4.3 × 105 positive integer for large number

0.0000057 5.7 × 10−6 negative integer for small number

To convert from scientific notation, look at the power of 10 to tell   
how many places and which way to move the decimal point.

Complete to write each in standard notation.

1. 4.12 × 106 2. 3.4 × 10−5

Is the exponent positive or negative? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Move the decimal point right or left?

How many places? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the number in standard notation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write each number in standard notation.

3. 8 × 105 4. 7.1 × 10−4 5. 3.14 × 108

To convert to scientific notation, determine the factor between 1 and   
10. Then determine the power of 10 by counting from the decimal   
point in the first factor to the decimal point in the given number.

Complete to write each in scientific notation.

6. 32,000,000 7. 0.0000000712

What is the first factor? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

From its location in the first factor, which   
way must the decimal move to its location   
in the given number? How many places? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write the number in scientific notation. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Write each number in scientific notation.

8. 41,000,000 9. 0.0000000643 10. 1,370,000,000

Problem Solving

1. 212 fruit flies 2. 811 bacteria

3. 13 hr 4. 312 cm3

5. D 6. F

7. D 8. H

Reading Strategies

1. 3 2. 3

3. yes

4. (3 • 3) • (3 • 3 • 3 • 3)

5. 36 6. yes

7. yes 8. 53

Puzzles, Twisters & Teasers



B E L L Y

Answers for Lesson 3

Practice A

1. 0.176 2. 8,900

3. 0.062 4. 101

5. 58,000 6. 810,000

7. 0.00038 8. 0.00203

9. 5000 10. 312,000

11. 0.076 12. 0.0000854

13. 3.76 × 105 14. 9.58 × 106

15. 6.5 × 102 16. 1.006 × 103

17. 2.9 × 101 18. 6.1 × 10−3

19. 1.07 × 10−2 20. 2.008 × 10−4

21. 5.3 × 10−4 22. 2.508 × 105

23. 9.4 × 10−5 24. 8.6 × 10−4

25. 9.3 × 107 26. Earth

Practice B

1. 254 2. 0.067

3. 1140 4. 0.38

5. 0.00753 6. 56,000

7. 910,000 8. 0.000608

9. 859,000 10. 3,331,000

11. 0.00721 12. 0.000588

13. 7.5 × 107 14. 2.08 × 102

15. 9.071 × 105 16. 5.6 × 101

17. 9.3 × 10−2 18. 6.0 × 10−5

19. 8.52 × 10−3 20. 5.05 × 10−2

21. 3.007 × 10−3 22. 5.226 × 103

23. 4.0 × 10−2 24. 9.8856 × 104

25. 7.7812 × 108 26. the hair

Practice C

1. 634,000 2. 0.000071

3. 4,230,000 4. 0.0000008235

5. 0.000000060089 6. 5,200,000,000

7. 2,054,700,000 8. 0.0000008394

9. 968,800,000,000 10. 9.7406 × 1010

11. 6.7 × 10−11 12. 5.28 × 109

13. 8.4 × 10−8 14. 6.521 × 1011

15. 7.254 × 10−10 16. 2.0509 × 1013

17. 6.6 × 10−14 18. 3.05 × 1013

19. 2.6 × 1011 mi3 20. 3.3 × 10−9 sec

21 1.8 × 10−4

Review for Mastery

1. positive; 2. negative;

right 6; left 5;

4,120,000 0.000034

3. 800,000 4. 0.00071

5. 314,000,000

6. 3.2; 7. 7.12;

right 7; left 8;

3.2 × 107 7.12 × 10−8

8. 4.1 × 107 9. 6.43 × 10−8

10. 1.37 × 109